Patent Claims

        1. Apparatus for setting the transmission power for the transmission of digital information (13) via a transmission channel (11) with a control means (43) for boosting or reducing the transmission power and a quality meter (27) for

5   communicating a transmission quality (28) of the transmission channel (11), characterized in that the control means (43) sets the transmission power for the transmission of digital information dependent on a difference between the transmission quality (46) determined by the quality meter (27) and a transmission quality (47) that is required for the transmission data rate (34) employed for the

10   transmission of the digital information (13) with a specific, maximally allowed error rate.

        2. Apparatus according to claim 1, characterized by a definition means (29) for defining a maximum transmission data rate of the transmission channel (11) dependent on the determined transmission quality (28).

15   3. Apparatus according to claim 1, characterized by a connection with which the definition means (29) for determining the maximum transmission data rate (28) is supplied with a predetermined, maximally allowed error rate.

        4. Apparatus according to claim 2 through 3, characterized by a selection means (33) for selecting a transmission data rate (34) dependent on the maximum

20   transmission data rate (30) determined by the definition means (29) and dependent on a specific, requested transmission data rate (32).

        5. Apparatus according to one of the claims 1 through 4, characterized by a transmitter (10) for the transmission of digital information (13) via the transmission channel (11) with:

25   a digital channel encoding device (50) for encoding the digital information,
a bit/symbol converter (15) for presentation of the digital information (13) in the form of symbols (16), and
a modulator (17) for mapping the symbols (16) onto signal values (18) for transmission via the transmission channel (11);

30   and a receiver (12) with:

a demodulator (55) for converting received signal values (19) into detected symbols (23),

a symbol/bit converter (24) for converting the received symbol stream (23) into an encoded bit stream (53), and

5   a decoder means (24) for presentation of the detected symbols (23) as detected digital information (25).

6. Method for setting a transmission power for the transmission of digital information (13) via a transmission channel (11), whereby the transmission quality is measured, characterized in that

10   a boosting or lowering of the transmission power for the transmission of digital information is set dependent on a difference between the identified transmission quality (46) and a transmission quality (47) that is required for a defined transmission data rate (34) employed for the transmission of the digital information (13) with a specific, maximally allowed error rate.

15   7. Method according to claim 6, characterized in that a maximum transmission data rate (30) of the transmission channel (11) is defined dependent on the identified transmission quality and on the modulation method (28) employed.

8. Method according to claim 7, characterized in that the maximum transmission data rate (30) is defined dependent on a specific, maximally allowed

20   error rate (61).

9. Method according to one of the claims 6 through 8, characterized in that the following steps are implemented for the transmission of the digital information (13):

presentation of the digital information (13) in the form of symbols (16);

25   mapping the symbols (16) onto signal values (18);

transmitting the signal values (18) via the transmission channel (11);

receiving the transmitted signal values (21);

detecting the received signal values (21) and mapping the detected signal values onto detected symbols (23), and

30   converting the detected symbols (23) into a detected digital information (25).

10. Method according to one of the claims 6 through 9, characterized in that a signal-to-noise ratio based on signal values received at the receiver side is defined as criterion for the transmission quality (28).

determining the transmission quality (28) of the transmission channel (11), and

5   defining a maximum transmission data rate (30) of the transmission channel (11) dependent on the identified transmission quality and on the modulation method (28) employed. [sic]

11. Method according to claim 10, characterized in that the maximum transmission data rate (32) is additionally defined dependent on a specific, maximally

10   allowable error rate (61).

12. Method according to one of the claims 10 and 11, characterized in that, additionally, a transmission data rate (34), a mapping algorithm and a corresponding encoding method is selected dependent on the maximum transmission data rate (30) of the transmission channel (11) determined by the definition means (29) and

15   dependent on a requested transmission data rate (32) and maximally acceptable error rate (61).

13. Method according to one of the claims 10 through 12, characterized in that

the transmission quality (280 is respectively determined for different modulation

20   methods;

a maximally possible data rate (30) of the transmission channel (11) is defined for each modulation method;

the modulation method to be employed is selected dependent on the maximum transmission data rate (30) determined for each modulation method.

25   14. Method according to one of the claims 10 through 13, characterized in that a transmission power for the transmission of digital information (13) via the transmission channel is boosted or lowered dependent on the difference between the identified transmission quality (46) and a transmission quality (47) that is required for a defined transmission data rate (34) employed for the transmission of the digital

30   information (13) with a specific, maximally allowed error rate.

15. Method according to one of the claims 10 through 14, characterized in that the following steps are implemented for the transmission of the digital information (13):

presentation of the digital information (13) in the form of symbols (16);

5 mapping the symbols (16) onto signal values (18);

transmitting the signal values (18) via the transmission channel (11);

receiving the transmitted signal values (21);

detecting the received signal values (21) and mapping the detected signal values onto detected symbols (23), and

10 converting the detected symbols (23) into a detected digital information (25).

16. Method according to one of the claims 10 through 15, characterized in that the signal-to-noise ratio is defined as criterion for the transmission quality (28).

17. Method for adapting a transmission power for the transmission of digital information (13) via a transmission channel (11) to the transmission quality of

15 the transmission channel (11), comprising the following steps:

determining the signal-to-noise ratio (46) of the transmission channel;

boosting or lowering the transmission power dependent on the difference between the identified signal-to-noise ratio (46) of the transmission channel (11) and the signal-to-noise ratio (47) of the transmission data rate (34) used for the transmission of the

20 digital information (13).